The Way Forward
- in ESA

D Lumb Paris, Science Workshop

29/4/2010

Introduction

- We are here to update the community about the current status of the IXO studies
- **Need to be sure that the science case is consolidated for submission to the Cosmic Visions assessment *Yellow Book***
- **Reinforce the message that the community has to lobby hard to support IXO into the next phase**
- *Technical presentations to demonstrate IXO is technically feasible and supports a huge range of science investigations*
- ***Science talks addressing many areas of interest – we will try to ensure that a broad and coherent case is constructed from all the inputs (let's have your images and simulations)***
- ***Strengthen the links within the community (~200 people here but 2000 people use data from the Chandra and XMM observatories)***

Schedule

- The industry studies and instrument activities will complete in July & the YB science case must be coherent with the baseline configuration presented (performance, mission duration etc.)
- Programmatic analysis of instruments and overall mission, together with costs carried out over summer (as if an ESA – only mission)
- Can further elaborate the science case over summer and up to +/- November submission to AWG
- Internal review of technical and programmatic experts meets through October
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Lessons from M Class selection

- The science case presented to AWG and SSAC should be so convincing that recommendation has no reservations
- The Technical Review was very thorough – and hyper critical
- Major issues for all missions were
  - credibility of designs and mass margins
  - credibility of implementation schedule
  - TRL status and plans to achieve TRL 5/6 in medium term
- Despite following the ECSS standards for subsystem design margin and overall system margin the Tech Rev demanded more margins
- Study Manager is therefore defending a strict mass philosophy AND ensuring such additional margin can be demonstrated with a defendable science case.

AWG & SSAC

- Look at the AWG & SSAC members list
- Who is interested in your science and from your country
- Tell them the mission design is feasible and on track

- Frequent message: "You started at 30 sqm and have continually lowered area"
- Be honest - It's not XEUS and it's no longer 30 sq m !
- ***We have benefited from all the work ad interim, and have a focussed science case that can be achieved with current design***

SPC

- Know your national delegates, is your industry interested
- Tell them the mission design is feasible and on track
- Tell them your science is best served by IXO and only IXO
- Tell them that the synergies with other major European facilities are strong (E-ELT, Euclid, SPICA, SKA, ALMA…..)
- With 1 planetary and 1 astrophysics L-mission that could be carried forward to definition, NASA and ESA can decide later which best suits programme for the 1st into implementation

The Definition Phase

- **During 2010 a Technology Development Plan will be put together to be blessed by IPC +/- November**
- **If IXO proceeds to definition, the funds will be made available to start the identified Technology Development Activities**
- **Continue with two parallel competitive industry studies for definition. (Phase A/B1 in M-class). Leads to Preliminary Requirements Review**
- **Elaborate further the potential split between three Agencies, harmonise the schedules**
- **Get all TRLS to 5/6 by end 2012 – this is consistent also with the NASA schedule to get a ~2021 launch date**

5 Component and/or breadboard validation in relevant environment

6 System/subsystem model or prototype demonstration in a relevant environment (ground or space)

IXO: The next great X-ray observatory